

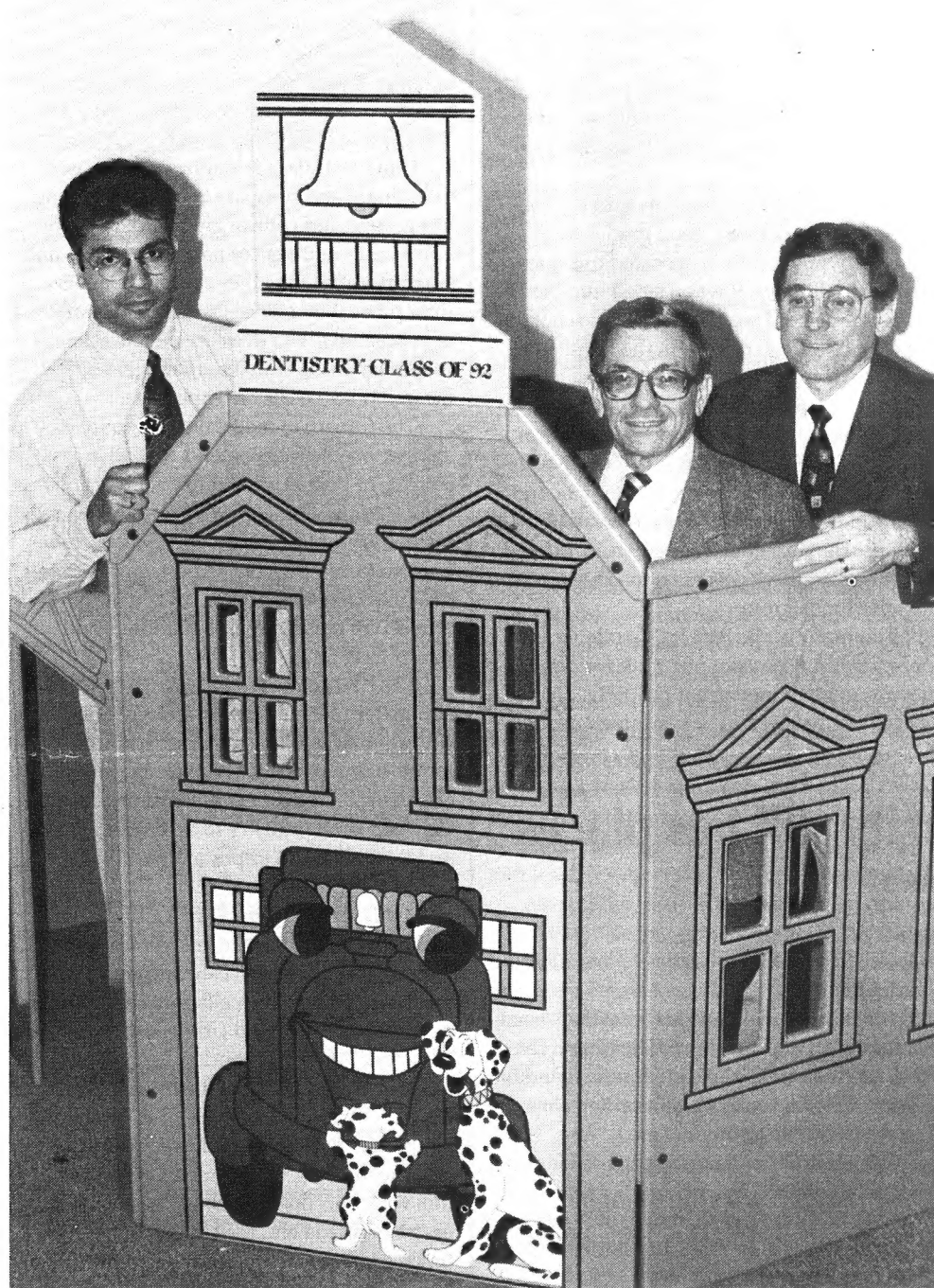
# FOLIO

UNIVERSITY OF ALBERTA  
26 JUNE 1992



INSIDE

- Youth was served at 'Family Day at SUPERFARM'
- Deans discuss whether universities are providing a quality learning experience



Dentistry graduate Nazir Lalani, left, Geoffrey Sperber (Oral Biology), centre, and Dean of Dentistry Norman Wood are pleased with the University's newest "residence."

## Fibre optics: coming to a building near you! *University of Alberta entering new computer age*

The first phase in the installation of a \$2.8 million fibre optic computing network should be completed by December 1992. The result: the connecting of the Computing Centre in the General Services Building with the Central Academic Building.

Officials are hopeful that by 1994 the main ring of the fibre optic backbone will be laid in the underground campus utility corridor system. An additional 47 kilometres of backbone fibre optic cable will eventually connect to the main ring from basement machine rooms in various buildings on campus.

University departments will be financially responsible for connecting their token ring and ethernet local area networks (LANs) to the backbone.

"This initiative will place the University of Alberta at the forefront of network technology and functionality at Canadian universities," says University Computing and Network Services Director Monica Beltrametti. "It will provide the capacity and speed that our instructors, students and researchers need to excel in today's information-driven world and will support the full utilization of the proposed high-speed national network, the Canadian Network for the Advancement of Research, Industry and Education (CANARIE).

"The fibre optic network will also place University of Alberta scholars and researchers on a more competitive footing with colleagues using advanced networks in the US, Europe and Japan," Dr Beltrametti said.

Fibre distributed data interface transmissions use impulses of light travelling along strands of glass fibre. FDDI signals are "cleaner" than those generated by older networking technologies based on electrical signals transmitted over copper wire, and there is less electromagnetic interference.

The new system will be faster and have greater capacity. For example, with current

FDDI technology, up to 100 megabits per second can be transmitted over distances of up to 200 kilometres. In comparison, the existing Ethernet network on campus has a top limit of 10 megabits per second and the aging HYPERbus network can only support transmissions at 19.2 kilobits per second.

The new system promises to become a powerful research tool. Digital transfers of large files become possible, for example, experimental data, multimedia files, full text journals, and complex graphics-intensive applications. Students and professors will be able to get access to local and remote databases and software libraries and will be able to connect to and use remote computers and associated resources from their own desktop computers. The new network will also allow people to share the hitherto isolated workstations and minicomputers around campus.

The second installation phase will be carried out in 1993 and will link the Central Academic Building with the Medical Sciences Building and several other contiguous buildings. Phase three will get under way later that year and will connect the southern parts of the campus. Phase four will start in 1994 and will connect the remaining campus buildings where local area networks have been installed.

The decision to build the network was the result of an extensive consulting and planning process, involving senior administrators, the University Computing Advisory Group, user representatives and the University's new Network Advisory Committee. As a result of recommendations contained in the document *Maintaining Excellence and Accessibility in an Environment of Budgetary Restraint*, the CNS salary and benefit budget has been reduced by \$1 million over five years. That money is being redirected into capital.

## Dentistry Class gives Faculty a parting gift

We've all had the experience. We've been in the dentist's or the doctor's waiting rooms. You know the ones. They have four walls, a few chairs and perhaps—if you're fortunate—a few magazines to read while you wait. The children are bored. There are no books to read, no toys to play with.

Graduands of the Dentistry Class of '92 are certainly familiar with the scenario. In fact, they've done something about it. And in recognition of the Faculty's 75th anniversary, they've donated a children's play centre to the Faculty for its faculty clinic.

According to Class President Nazir Lalani, he came up with the idea, proposed it

to his classmates and they ate it up. So they solicited corporate sponsors such as Canadian Dental Supply, Professional Practice Builders and Aurum Ceramic Dental Laboratories Ltd and had Creative Play Environments Manufacturers (Calgary) build the play centre.

"It's a tremendous example of the enthusiasm and dedication of the Class of '92," said Dean Norman Wood. "I'm so delighted they consider this their school and program. This [play centre] will be the first stage of our new building," he said, tongue planted firmly in cheek.

"Now there's something there to keep the children happy," Lalani said of the children's passive play, corner unit.

## Teaching Research Fund backs five projects

The University Teaching Research Fund recently approved the funding of five projects.

Physical Education and Sport Studies Professors Brian Nielsen and Marsha Padfield were given \$4,690 to investigate the use of performance for evaluation in dance. Chemistry Professors Josef Takats and Margaret-Ann Armour were awarded \$10,000 for their project pertaining to the improvement of the laboratory experience in large introductory chemistry courses.

Botany Professor John Hoddinott was awarded \$6,300 to conduct a project to demonstrate the possibility of tutorial assistants conducting peer training. Psychology

Professors Michael Dawson and Dallas Treit received \$9,989 to begin the development of an interactive neuroanatomy tutor software package for teaching brain structure and organization.

Sue Scott and Paula Brook (Adult, Career and Technology Education) and Beth Young (Educational Administration) received \$5,874 to examine teaching and learning: understanding multiple approaches. Their project is designed to make implicit theories, perspectives and worldviews of instructors explicit. By interviewing 12 professors, the researchers want to determine strategies and techniques of teaching that are congruent with theoretical preferences.



# Deans try to determine whether we're providing quality learning experiences

*Most say yes, but there's room for improvements*

If governments hadn't been cutting university budgets, "we probably wouldn't be holding this conference," says Kathleen Mailer, Dean of the Faculty of Science at Athabasca University, who suggested that the kinds of questions being raised among academics are both healthy and timely.

Dr Mailer, a participant on a Deans' panel at the University Management Workshop entitled "Students—a Lifeline Between Universities and Communities", said perhaps financial stringency has been a good thing. Academics have been forced to think very seriously about how dollars are being used.

Addressing the question, "Are we providing a quality learning experience for our students?" Dr Mailer said academics aren't doing a good job of teaching ethics and educating students who are scientifically literate.

They're also not as concerned about the success of their students as they should be. For example, have you ever met a mathematician who was proud of a 100 percent pass rate? On the other hand, academics do a good job of consistently trying and questioning.

Athabasca University does a very good job of establishing crystal-clear objectives and students know what's expected of them, Dr Mailer said. Students ultimately enroll at Athabasca because they want to learn, she added.

At the University of Alberta's Business School, Dean Jean-Louis Malouin said students generally are satisfied with teaching, how they're evaluated, the relevance of the material and the educational challenges they're presented with. They are not satisfied with the usefulness of course evaluations for improving teaching and they believe they're not being treated as individuals, said Dr Malouin.

Too many staff members at the University see the place as simply a place to work and not as a "learning environment," said the Dean, adding that a shift must occur where everyone is learning oriented.

Catherine Eddy, Dean of Academic Affairs at Concordia College, said their 1,300 students have a strong sense of shared mission. Average class sizes are between 25 and 45, so by third year most students will take classes with professors they already know. Social interaction is easier in the smaller institution, she explained. The Dean said Concordia's focus is on undergraduate education and professors are heavily judged on their teaching capabilities.

Faculty of Agriculture and Forestry Dean Ed Tyrchniewicz said his Faculty is making a real effort to give students a solid foundation in the sciences, an awareness of current issues in renewable resources, an exposure to the humanities and a good grounding in ethics and logic. On teaching, he acknowledged that the University's reward system is heavily weighted in favour of research, and that has to change.

Looking at issues facing graduate students, Associate Dean of Graduate Studies and Research Tony Kernahan said more departments are responding to student needs by establishing more course-based master's programs. That is particularly responsive to professionals who want to return to university to learn.

In the last few years, the Faculty has urged departments to "fast track" outstand-

ing graduate students, changing students' status from MA to PhD programs. "We're not really serving students by [unnecessarily] prolonging the length of time it takes for them to complete their degrees," he said, characterizing the U of A's graduate programs as healthy and strong.

There are a number of factors which account for graduate students dropping out, Dr Kernahan related. An Ontario study, for example, has determined that graduate students are dropping out because of interruptions to earn money, the time spent working and because of low incomes. Lengthy pre-thesis requirements, dissatisfaction with supervisors and delays in defining projects are also factors.

Dean of Arts Pat Clements said the Faculty received relatively good grades from students who recently responded to a questionnaire, although it was a small number of students who did so. "Do we give a scholarly experience of high quality in the Faculty of Arts? Yes, I think so."

Dean Clements said the Faculty needs to deal with the question of students' sense of alienation, a problem that arises because of the institution's size. Students who responded to the questionnaire said they were delighted with the range of courses the Faculty offered, but they said there was not enough sense of identity in the group.

Too many of the Faculty's students are poor, she said. "Lots of our students don't have enough money to eat properly. That's something we need to be concerned about."

## AHFMR gives U of A and U of C funding to support clinical trials

*Canada lags behind in supporting clinical trials*

The Alberta Heritage Foundation for Medical Research has given the Universities of Alberta and Calgary \$450,000 each over three years to support health care research and clinical trials.

If the program is productive and meets criteria set by AHFMR, an additional \$300,000 will be given to each institution.

"This is seed money that will support clinical trials which will improve the quality of medical care and enhance Alberta's reputation as a medical research centre," AHFMR President Matthew Spence said.

Clinical trials, a scientific method used to evaluate and compare treatments among test groups and control groups, usually involve large numbers of patients, doctors and support staff. Often they require patients from more than one centre and the number of people involved over time makes clinical trials very complicated to manage. That means clinical trials are expensive.

The Canadian medical community has another problem to contend with: there is a scarcity of people trained to properly conduct clinical trials. The AHFMR grant will enable researchers in Edmonton and Calgary to recruit and train people—experts in designing clinical trials, statisticians, coordinators, nurses, lab personnel, data handlers and interpreters.

The trial centres will participate in international multicentre trials, already under way, and they will do contract research for industry, particularly pharmaceutical companies. "We expect more money will be attracted from industry to do clinical trials and this will be an important part of the program," Dr Spence said.

"This AHFMR funding of clinical trials will allow researchers to answer important questions about health care and do it in the most efficient way by collaborating with Calgary researchers," said University of Alberta President Paul Davenport.

The second phase of the funding is partly dependent upon the degree of collaboration among the Edmonton and Calgary researchers. The funding was awarded after consultation with four distinguished researchers from eastern Canada and the United States. The funds come under the AHFMR Technology Commercialization Program.

Foothills Hospital in Calgary is one of the partners in the agreement because it has established a clinical research program in the Centre for the Advancement of Health, led by Heritage Medical Scientist John Remmers.

## Summer Youth University still has places

*Program has courses in 39 disciplines*

Spaces in a variety of classes are still available at Summer Youth University (SYU), 6 to 31 July at the University of Alberta.

The program, split into two, two-week sessions (6 to 17 July and 20 to 31 July), is intended to help teens bridge the gap between high school and university. Classes emphasize hands-on activities with labs, visits to museums, field trips, discussions and debates. There are no exams and no homework. New classes this year include Physical Therapy, Romance Languages, Foods and Nutrition, Art History and Librarianship. A modern history class will discuss the collapse of the Soviet empire.

Eligible students are entering Grades 8 to 12, or graduating. A five-day session, 6 to 10

July, is specifically for Grades 11 and 12 and graduates.

All classes are scheduled weekdays from 9 am to noon and 1 to 4 pm. The tuition fee is \$246 for two weeks and \$147 for the five-day session. (Students can stay on campus in Lister Hall for an additional fee.)

Registrations will be accepted as long as classes have space.

SYU '92 is the eighth annual program; registration has gone from 190 students in 1985 to 705 last year.

For further information on SYU, call Program Manager Maryanne Budnitsky, at 492-5597.

## LRT station on track for official opening

*U of A departments can participate*

University departments are invited to take part in the official opening of the campus LRT station, Sunday, 23 August. There is ample room for display booths in the station and any department interested in staffing a booth or in participating in some way, is asked to speak with Judy Goldsand, Office of Public Affairs, before 8 July.

The official opening of University Station will be held between 1 and 2 pm (attendance is by invitation only). The Department of Pub-

lic Works will hand over the keys to the City of Edmonton and there will be remarks by a number of dignitaries. The space for booths is available from 12:30 to 6. Since there will be a shuttle service running between University and Grandin Stations and the public can ride the LRT for free that afternoon, a large turnout is expected.

Goldsand and the Office of Public Affairs are coordinating the University's participation in the opening.

## Strategic planning session moved to University Hall

The Strategic Planning Task Force Public Meeting on 29 June has been moved to 2-1 University Hall (Council Chamber). The meeting will run from 8 am to noon.

## FOLIO

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Advertisements cost 40 cents per word with no discount for subsequent insertions. There is a limit of 30 words and a minimum charge of \$2.00. Advertisements cannot be accepted over the telephone. All advertisements must be paid for in full at the time of their submission.

**Display advertisements:** 3 pm Thursday, eight days before desired publication date. Camera ready artwork is required to size, complete with halftones if necessary. Contact Public Affairs for sizes, rates and other particulars.

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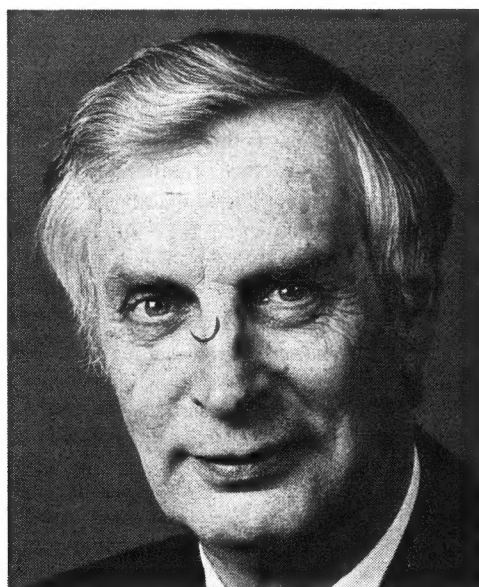


University  
of  
Alberta



# Ray Fortune mixed TRLabs' formula for success

*Outgoing president relied on his business acumen*



Ray Fortune will return to Alberta periodically as he's retained his membership on the Alberta Research Council Board.

Founded via a \$3.5 million contribution from Bell-Northern Research (BNR) and a matching sum from the Government of Al-

berta, it was plain that ATRC (Alberta Telecommunications Research Centre) would have money talking boldly on its behalf. At the same time, though, the person in charge would have to move in industrial, governmental and academic circles and subtly flesh out the dialogue if Canada's first telecommunications research consortium was to prosper scientifically. (ATRC, now known as TRLabs (Telecommunications Research Laboratories), was set up as a nonprofit organization).

Ray Fortune felt that he was qualified to fill that role and believed that BNR, which happened to be his employer, and the provincial government, thought the same way.

While he had a BSc in Electrical Engineering, Fortune's background was in business, primarily managing and marketing, and he says "it was unusual for someone like me to be in the running for the presidency of TRLabs. I know they [the University of Alberta, the third partner] were concerned about my candidacy," he recounted in his south side office recently.

The decision to appoint him president and chief executive officer for a five-year term proved to be a wise one, so much so that

when TRLabs began discussions with the University of Saskatchewan over the opening of a lab in Saskatoon, Fortune was asked to stay on for another year. Throughout the six years, which drew to a close last week, Fortune says he tried to justify the partners' faith in him by treating them and the various industrial sponsors who came on the scene later as valued customers and the TRLabs' staff as "very important partners in this whole enterprise."

He took office in August 1986 and in March of the following year unveiled a business plan that remains the basis of TRLabs' operation. From the Microelectronic Centre in North Carolina, one of five universities that are in partnership with multiple industrial partners, he took the concept of open-endedness. From the Institut national de la recherche scientifique in Quebec, he took the concept of an external lab supporting the research of professors in their labs. These elements were combined and became the starting point for TRLabs.

Electrical Engineering Professor Paul Goud observed that Fortune had the right recipe for bringing three distinct parties to-

gether and he was a quick study, someone who "learned about university culture on the fly without falling off the log." The success of TRLabs depends on each of the three partners being happy and Fortune performed "a careful balancing act," Professor Goud says.

"Research consortia represent a new opportunity for universities," Fortune writes in a guest editorial in the Faculty of Engineering's current issue of *Colloquium*. "The relationship between the university and the consortium may either be arm's length on a contractual basis or, as in the case of the TRLabs, a membership basis. On an arm's length basis, the consortium is just another source of funds for university research. However, a membership basis permits the university and its academic staff to have a major influence on the direction of the research program chosen by the consortium, to work with the industrial members and to involve the staff of the consortium, not just in the research but also in the teaching aspects of the university program."

"Our initial objective was to be of benefit to our sponsors and staff," Fortune told *Folio*. "We did not set out to be a centre of excellence but we are."

TRLabs specializes in precompetitive applied research in telecommunications. Since its inception, TRLabs has carried out some 125 research projects and been responsible for 15 patents.

Two years ago, Fortune helped the University's Faculty of Engineering establish a chair in fibre optic communications research. Jan Conradi, who is preeminent in the field, was subsequently appointed to the chair. Dr Conradi teaches in the Faculty and heads a research team at TRLabs. His objective is to increase the information-carrying capacity of fibre optic cable.

"Ray Fortune has been a unique individual in bringing together the private, academic and government sectors," says Bob James, Vice-President (Research). Dr James feels Fortune's most noteworthy contribution has been the addition of "attached staff" to TRLabs' staff component. Under this arrangement, professors, postdoctoral fellows, undergraduate and graduate students, and industry professionals can take advantage of the facilities and know-how at TRLabs. Postgraduate

*Continued on page 4*

## Students' needs will be top priority for Harvey Zingle

*New Dean of Education wants better relationship with students*

Harvey Zingle, the newly appointed Dean of Education, is the kind of person who prefers to see the glass as half full, rather than half empty. And he believes that's one of the major reasons why so many of his colleagues in the Faculty urged him to throw his hat into the ring.

"Many of the staff see that the University is going through tough times," says the former Chair of the Department of Educational Psychology and former Associate Dean of Research and External Relations. "They see me as positive, optimistic and they want someone who will make them feel good about themselves."

Asked to identify the single most pressing issue facing the Faculty, Dr Zingle says there's no question that it's morale of staff and students. The continuing budget cuts have exacted a considerable toll on morale, but it's going to be important to remind ourselves that the Faculty has and will continue to make outstanding contributions to the field of education, he explains.

A second issue is the Faculty's relationship with its students. "I've sensed a need for us to send a clear message to students that we're here to serve them and we want to help in any way we can," says Dr Zingle, adding that it's not a criticism of what's happened in the past. "But we can do significantly better. Our research is important, but we're here because of you, the students."

When graduate students enter the Faculty, they're assigned an advisor and they're given support and advice. "Yet when we admit a student to an undergraduate program, we say 'Read the Calendar,'" he says, and basically the students are on their own. "We're going to assign them academic advisors," Dr Zingle says indicating that the system could be in place by next spring. Undergraduate students, he points out, can be in the Faculty for four years, and yet no Faculty member knows many of them well enough to even write the students letters of reference. The staff is very supportive of the idea.

Dr Zingle, whose five-year term as Dean begins 1 July, expects to spend a lot of time

with the Faculty's educational partners. For example, he's established an Advisory Panel on Teacher Education and many senior educators, including the Deputy Minister, have agreed to sit on the panel, which will meet for the first time this fall. They'll deliberate issues facing education. "We're partners in teacher education and we all have a stake in it," Dr Zingle says, adding that the Faculty wants to make sure that people in the schools know that teacher preparation is a collaborative task.

Meanwhile, like other Faculties on campus, Education is facing cuts again this year. Although smaller than in the past—a 1.8 percent operating cut this year—that's meant the loss of another five and one-half positions and cuts in support for graduate students. Dr Zingle points out that the Faculty still has about 5,000 students and yet has 20 fewer academic staff.

**Asked to identify the single most pressing issue facing the Faculty, Dr Zingle says there's no question that it's morale of staff and students.**

"Our data indicate that we have one of the heaviest workloads on campus."

Tough times simply can't stifle new initiatives, though. Dr Zingle says the Faculty is going to be called upon to provide more distance education and to increasingly incorporate the use of teleconferencing and computer-assisted learning in its programs. Those methods are improving by the minute, he asserts. So-called "new money" will be scarce for new initiatives, he predicts, so that will mean shifting resources within. "If you value something, you have to demonstrate that by shifting resources."

Discussing the Faculty's four-year undergraduate degree, Dr Zingle says it has a great history and prepares excellent teachers. "I hope we don't move away from the four-year program," he says, noting that research suggests that teachers prepared in such a pro-

gram tend to be more student-centred, while those who do after-degree programs tend to be more subject-focused. Preparing teachers who are student-centred and conscious of the diversity of student needs is even more important today, he says, at the same time acknowledging that it would be easier from an administrative standpoint simply to offer an after-degree program. "We're prepared to live with that complexity, though."

The Faculty faces staffing challenges as well. History indicates there will be a fair number of professors who will be taking early retirement, he says. And like most other Deans, Dr Zingle is worried that budget cuts will be absorbed at the expense of recruiting faculty. Nor does he want to see an erosion of the Faculty's prestigious graduate programs. "We're regarded as one of the premier graduate programs in the world," he says, noting that about one-third of the deans of faculties of education in Canada are graduates of this program and about 20 graduates have gone on to lead universities and colleges.

Nevertheless, Dr Zingle agrees with Stuart Smith's contention that faculties of education across the country are not highly regarded within their own institutions. "In a way, his [Commission of Inquiry on Canadian University Education] report provides a window of opportunity for faculties of education," Dr Zingle says.

"We have expertise on instruction and curriculum development and we should be able to share that expertise across the campus. As a Faculty we want to send a clear message that we're prepared to work with you [the other Faculties]."

While the Smith Commission has been partly responsible for a growing awareness of the importance of teaching at universities, Dr Zingle senses a willingness of U of A faculty to focus on the value of good teaching and the importance of assessing teaching. A recent meeting with Chris Knapper, a prominent advocate for the value of good teaching at universities in Canada, convinced Dr Zingle that the University should be working more closely with tutorial assistants.



Acting Dean of Science Robert Crawford, left, awards the 1991-92 Gold Medal in Science to Wing Kwong (Nelson) Shum. While completing his BSc Specialization (Meteorology), Shum received the BP Canada Bursary, 1989; President's Scholarship in Science, 1990; NSERC Undergraduate Student Research Award 1990, '91, '92; Board of Governors Prize in Science, 1991; and Louise McKinney Postsecondary Scholarship, 1991. He plans to enroll in the Department of Geography's graduate program, earn an MSc in Meteorology and work as a forecaster for the Atmospheric Environment Service.



## Harris says it's time to get rid of harmful leadership myths

The old metaphors we use to explore the nature of organizations aren't all that applicable to universities, says Vice-President (Finance and Administration) Glenn Harris.

Addressing Spring Convocation earlier this month, Harris said the metaphor of organization as machine was used as a basis on which many parts of the University, particularly the administrative areas, evolved when tasks appeared more routine, the environment more stable and the human "machine" parts more compliant.

"Today, however, these conditions just do not apply," he said. "The university as machine adapts poorly, not being designed for innovation."

Nor is the organization as organism a suitable metaphor. "Unfortunately, the University is challenged to achieve particular goals, not merely to survive; and it is expected to do so in a much faster way than evolutionary processes permit," he said.

The metaphor of organization as culture is problematic. "As such, culture can never really be 'controlled', only its evolution influenced, and then only over time." Furthermore, the image of organization as political system reminds us that organizations can never be totally rational, since rationality is interest-based, changing according to one's perspective.

Harris said the learning organization, described by Peter Senge in his recent book *The Fifth Discipline*, requires organizations to use teams, and develop capacities for team learning and self-management. The learning organization is conceived in a way that has interesting implications for two familiar aspects of organizational well-being: vision and leadership.

Quoting Senge, Harris said, "Especially in the West, leaders are heroes—great men (and occasionally women) who 'rise to the fore' in times of crisis. Our prevailing leadership myths are still captured by the image of the captain of the cavalry leading the charge to rescue the settlers from the attacking Indians."

"So long as such myths prevail, they reinforce a focus on short-term events and charismatic heroes rather than on systemic forces and collective learning. At its heart, the traditional view of leadership is based on assumptions of people's powerlessness, their lack of personal vision and inability to master the forces of change. In a learning organization, leaders are very different. They are designers, stewards and teachers."

Harris said, "I believe this University is getting this type of leadership, and will benefit greatly from it."

## CURRENTS



### Student Adviser returns

After an extended maternity leave, Natalie Sharpe has returned to the position of Student Adviser, Office of the Dean of Student Services. Her office is in 240 Athabasca Hall.

Students who are seeking general advice about appeals procedures or assistance with the preparation of an appeal can be referred to her office.

Students can phone for an appointment at 492-2735.

### Garneau/University Childcare Centre

Garneau/University Childcare Centre located in Garneau School has full-time care available for children who will attend Garneau School Kindergarten in the fall.

Call Adriana Strikwerda, at 439-9050, for further details.

### 'Writing for University'

The 'Writing for University' classes start 6 July. This course reviews the basic skills needed for University-level written work. For additional information, call Effective Writing Resources at 492-2682.

## Fortune Continued from page 3

students have the opportunity to do thesis research under the supervision of their professors and in collaboration with TRLabs' staff and research personnel from industry sponsors.

To date, 30 U of A graduate students have completed their MSc or PhD studies at TRLabs.

"Under his leadership, TRLabs has become a flagship infrastructure organization in the advanced technology field in Alberta and Saskatchewan," Dr James says, adding that that should soon hold true throughout western Canada.

"The spirit of willingness to try new things in the west is superb. I'm not sure this institute could have made it in eastern Canada with the same level of success," Fortune comments.

Ask Fortune which gives him the most satisfaction, TRLabs' growth in a business sense or its advances in telecommunications research, and he'll say neither one. It has to do with seeing people grow as researchers before they move on and become key players in industry.

The TRLabs model doesn't fit every situation, Fortune cautions. We're very supportive of teachers in research. Some sponsors (and here he's speaking of other consortia) are only interested in the research end.

"Our model is not universal. We can be held up as a model for one kind of situation but not necessarily another."

A lingering concern is the lack of development of managers for institutes and consortia like TRLabs. "They are growing and they're important to the Canadian situation," Fortune says. Their [managers'] development isn't yet a part of the educational system. As it is now, they basically have to learn on the job. Running a consortia requires an entirely different attitude, he points out. "You don't beat the opposition into the ground. You build partnerships and you share. Strong entrepreneurs probably don't make successful consortia managers."

Ray Fortune will return to Ottawa where he will retire from BNR. However, he will stay active to some degree in the technical community. His work will relate to the building of research networks across Canada in telecommunications. "My stay in Alberta has positioned me very well to play that role," he says.

## BOARD OF GOVERNORS

### BRIEFS

#### Department Chairs: Board takes note of appointments, reappointments

The Board of Governors, at its regular meeting 5 June, received notice from the Educational Affairs Committee of the following appointments and reappointments of Department Chairs:

Wes Berg (Music), reappointed for three years; Keith Briggs (Plant Science), reappointed for five years; Clarence Capjack (Electrical Engineering), appointed for four years; John Holmes (Zoology), appointed for four years; and Michele Veeman (Rural Economy), appointed for five years.

#### Board approves two capital expenditures

The Board approved an expenditure to a maximum of \$3.1 million to provide an underground parkade for the Timms Centre for the Arts. The Board also approved an expenditure of \$1.8 million for removal of PCB-filled transformers and installation of dry type transformers. The Board Building Committee let it be known that it has approved an amount of up to \$500,000 for renovations to the Windsor and Stadium Car Parks in 1992-93.

#### Task force report on residences will be debated

The recent report of the task force on student residences will be sent to the Board Finance Committee for its consideration before it comes before the full Board. The report contains 25 recommendations.

#### President's Fund sponsors two projects

The President's Executive Committee has approved the expenditure of \$135,000 to assist in the creation of a microcomputer laboratory facility in the Library. It was also announced the Environmental Research and Studies Centre will receive \$50,000 per year for the next three years for operating support.

## U of A triple jumper qualifies for Olympics

University of Alberta triple jumper Oral Ogilvie will represent Canada at the Summer Olympics in Barcelona.

Ogilvie, who also competes for the Leduc Track Club, spanned 16.28 metres at the weekly Twilight Track and Field Meets in Edmonton, 3 June. A week later, he recorded a jump of 16.12 metres. At the Canadian Olympic team trials in Montreal last weekend his 15.87-metre effort topped the field.

The Olympic standard is 16.09 metres and must be attained twice.

Ogilvie is a two-time CIAU gold medalist in the triple jump, with a jump of 15.37 metres in 1991, and a 15.99 metre winning jump at the 1992 CIAU Track and Field Championships, held at the University of Western Ontario in March. The 24-year-old was named an All-Canadian in 1991 and in 1992. He was also judged the Most Valuable Male Athlete in the Golden Bears 1991 program.

## U of A surgeon new director of Canadian Council on Animal Care

The new director of the Ottawa-based Canadian Council on Animal Care is a University of Alberta Department of Surgery Professor. Don Boisvert also heads the Health Sciences' Animal Welfare Committee here.

Dr Boisvert says he shares the hope of CCAC's founder, Harry Rowsell, that the day will come when animals will no longer be used in research. "My performance has shown that I neither oppose nor promote experimental animal use."

"I have a deep sense of conviction of the importance of the CCAC," Dr Boisvert says of the volunteer peer review organization responsible for ensuring the two million animals used yearly in research, education and testing are housed appropriately and treated humanely.

Dr Boisvert said he would be pressing institutions using animals to provide adequate support and resources for their local (voluntary) animal care committees. Those committees review research protocols and can prevent or stop in progress any research in which animal stress or suffering are involved. He also wants to examine public, nonpartisan involvement on the committees, increasing community membership.

He favours the establishment of a computerized communications network among ani-

mal care veterinarians, staff and animal care committees, and will encourage the holding of regional workshops to promote exemplary animal care.

Dr Boisvert has a particular interest in alternatives to animal use. He was responsible for the formation at the U of A of the Nuclear Magnetic Resonance Research Group. NMR is a technique that uses electromagnetic fields to produce high resolution images of different parts of the body. With modifications to the coil, it can produce information on metabolism of tissues in a noninvasive way.

The primary question to be addressed, he says, is the evaluation of CCAC's current system of voluntary compliance, which is funded entirely by the Medical Research Council and the Natural Sciences and Engineering Research Council. Another question to be addressed is the possible introduction of provincial legislation across Canada which would require compliance with CCAC guidelines. Although CCAC's assessment program is nationwide, it operates without provincial legislation everywhere except Alberta and Ontario. Its standards are enforced by financial restrictions imposed by MRC and NSERC if institutions using animals fail to comply with CCAC guidelines.

## Ayer, Meekison named University Professors

William Ayer (Chemistry) and Peter Meekison (Political Science) have been named University Professors, effective 1 July 1992.

University Professorships are awarded on the basis of outstanding scholarly research recognized nationally or internationally, outstanding teaching and service to the University and the community-at-large.

"In appointing you as a University Professor, the University recognizes your outstanding record as a constitutional scholar and teacher, and your distinguished service to the University, province and country," President Paul Davenport said in a letter of congratulations to Dr Meekison.

The President said in a letter to Dr Ayer, "It is clear that you are held in the highest regard by your colleagues, students and former students who have commented on your leadership, enthusiasm, cooperation, compassion and dedication—a human being and scientist of exceptional merit."

Dr Ayer is one of the country's leading natural products chemists; Dr Meekison is one of Canada's leading constitutional authorities who, of late, has been an advisor to the provincial government during the constitutional negotiations taking place.



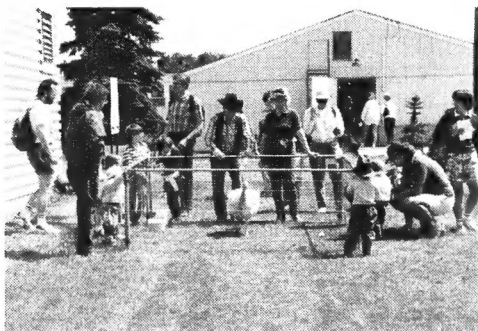
# 'Family Day at SUPERFARM'

*Cracking good time had by all*

The first "Family Day at SUPERFARM", 6 June, proved to be a powerful attraction. Upwards of 4,000 people of all ages visited the farm (known the rest of the year as the Edmonton Research Station) at the invitation of the Office of Public Affairs and the Faculty of Agriculture and Forestry. By good fortune, the farm was awash in sunshine; by design, it wore a festive face. The feeling, borne out by the photos on this page, was that visitors had fun and came away with a sense of the variety and importance of the research that's conducted at "their Farm in the City."



*Earth Day of a different sort.*



*Gobbledegook spoken here.*



*It's never too early to think about a career in research.*



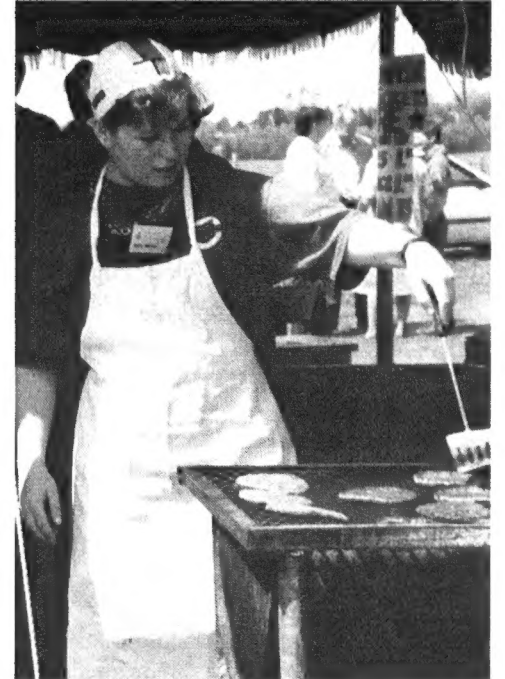
*SUPERFARM's main thoroughfare was well travelled.*



*"Pssst! Company's coming."*



*President Paul Davenport, daughter Audrey (far right) and her friend Kerri Kenny are shown around by Keith Briggs (left), Chair of the Department of Plant Science.*



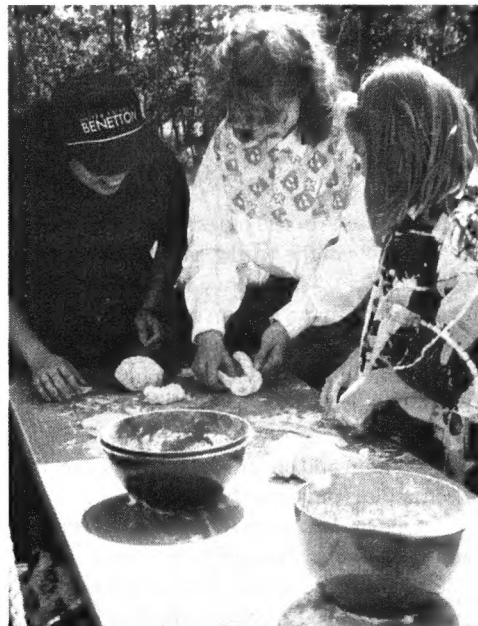
*Krista Watson of SORSE (Students' Orientation Services) wields a deft spatula. She was one of 25 student volunteers who contributed immeasurably to SUPERFARM's success.*



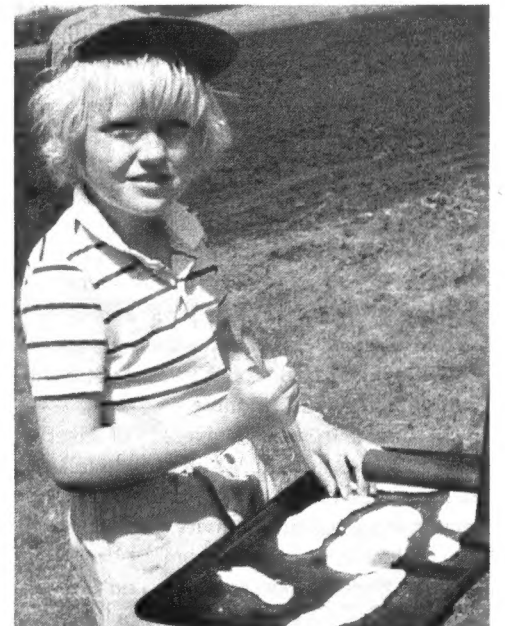
*There was lots of activity indoors too, in this instance, the conveying of advice by a professional.*



*The haywagons gathered no moss during SUPERFARM's hours of 11 am to 4 pm.*



*Bannock was the bond that united many chefs.*





# TALKS



## ALBERTA HERITAGE FOUNDATION FOR MEDICAL RESEARCH

29 June, 9 am

Marc Solioz, associate professor, Department of Clinical Pharmacology, University of Berne, Switzerland, "The Control of Intracellular Sodium: The Role of Pumps and Carriers in Enterococcus." 4-70 Medical Sciences Building.



14 July, 7:30 pm

Peter Aku, "Waste Water Treatment: An Austrian Experience." Main Lounge M-6, Meanook Biological Station.

Meanook Biological Station is located 135 km north of Edmonton on Highway 2, 75 km past the junction with Highway 18, where a sign indicates the Meanook turnoff. The station is 3.8 km from Highway 2 and 14 km south of Athabasca. Information: 675-4934.

## BOTANY AND PLANT SCIENCE

14 July, 3:30 pm

Roger Cousens, School of Crop Sciences, University of Sydney, Australia, "Understanding Weed-Crop Competition." M-149 Biological Sciences Centre.

## MEANOOK BIOLOGICAL STATION

30 June, 7:30 pm

Angeline Lam, "Effects of Five Chemicals on the Release of Toxins from Algal Cells." Main Lounge M-6, Meanook Biological Station.

7 July, 7:30 pm

Eric Higgs, "Inventing Nature." Main Lounge M-6, Meanook Biological Station.

## MEDICAL MICROBIOLOGY AND INFECTIOUS DISEASES

26 June, noon

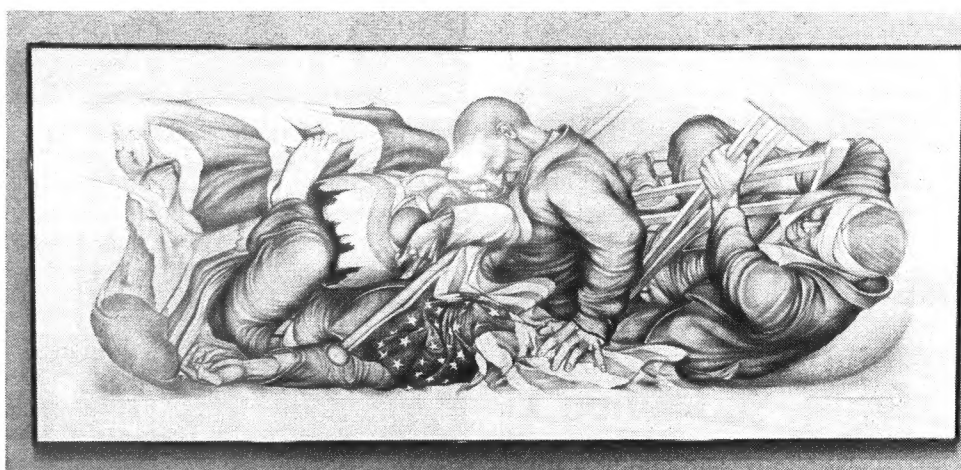
Cliff Clark, "Characterization of Eukaryotic Cell Receptors for Pertussis Toxin." 2J4.02 Mackenzie Health Sciences Centre.

## PHARMACOLOGY

2 July, 4 pm

John Connor, head, Department of Neurosciences, Roche Institute of Molecular Biology, New Jersey, "Imaging of Ca<sup>2+</sup> Dynamics in Nerve Cells." 207 Heritage Medical Research Centre.

# EVENTS



Desmond Rochfort's "The Burdens of Culture", graphite on paper, is one of a number of new works from the Collection of the Alberta Foundation for the Arts, on display at FAB Gallery.

## FAB GALLERY

Until 23 August

"New Works from the Collection of the Alberta Foundation for the Arts"—paintings, drawings, sculpture, prints and photographs

by 31 Alberta artists. Gallery hours: Tuesday to Friday, 10 am to 1 pm and 2 to 4 pm; Sunday, 2 to 5 pm; Monday and Saturday, closed. 1-1 Fine Arts Building.

## Breton Plots field day goes 3 July

"Developing a Farm Conservation Plan" is the theme for this year's Breton Plots field day, 3 July from 10 am to 4 pm. The Department of Soil Science will be celebrating 63 years of experimental work at the Breton Plots. (Breton is located about 100 km southwest of Edmonton.)

Speakers from the University of Alberta and Alberta Agriculture will present talks on conservation planning and restoring and maintaining soil productivity. Plot tours will be conducted in the afternoon.

The Breton Plots are situated on Gray Luvisolic (wooded) soils which are low in sulphur, nitrogen and organic matter. The

plots are some of the oldest long-term research plots in the world, says Jim Robertson (Soil Science). "While they were originally designed to find a system of cropping suitable for Luvisolic soils, they now serve a more important function of showing how various cropping practices have affected the soil. In these days of renewed concern about soil degradation and sustainable agriculture, the Breton Plots have much to tell us."

(One organization that agrees with Professor Robertson is the Red Deer Branch of the Alberta Institute of Agrologists. It recently presented a \$500 cheque to the Breton Plots Endowment Fund.)

# POSITIONS



The University of Alberta is committed to the principle of equity in employment. The University encourages applications from aboriginal persons, disabled persons, members of visible minorities and women.

## ACADEMIC

### HIGH SCHOOL LIAISON OFFICER (SEVEN-MONTH TERM POSITION TO COMMENCE 17 AUGUST 1992)

The high school visit program is a liaison outreach and recruitment program under the mandate of the Office of the Registrar. As a member of the Admissions team, the successful applicant would be responsible for the dissemination of information about University of Alberta programs of study, admissions policies, and the community to prospective high school students and counselling staff. The High School Liaison Officer represents the University at Alberta Career Day Fairs, presents counsellor workshops, conducts campus visitations and participates in the University Orientation Days. This position is one of two Academic Professional Officers who report to the Assistant Registrar (Liaison and Recruitment). Other staff include members of the Student Ambassador Program.

Applicants should possess an undergraduate degree, have strong communication, inter-personal and organizational skills and be able to travel extensively throughout Alberta. Knowledge of the University's academic structure and the community would be an asset.

Letters of application, a résumé and the names of three references should be directed to: Susan Main, Office of the Registrar, 120 Administration Building, by 3 July 1992.

### SESSIONAL APPOINTMENT, DEPARTMENT OF BOTANY

The Department of Botany, Faculty of Science, invites applications for an eight-month sessional appointment at the Assistant Professor rank.

**Teaching:** The successful candidate will be expected to teach courses in introductory ecology and botany and senior undergraduate courses in plant geography, peatland ecology and peatland development (including methods of peatland reconstruction).

**Research:** The successful candidate will use his/her expertise in the research of peatland paleoecology, including subfossil mosses, pollen and other plant indicators, to reconstruct the past development of western Canadian peatlands.

**Requirements:** Candidates should have a PhD and postdoctoral experience and be able to lead a multidisciplinary program in Holocene peatland reconstruction in north-western Canada. Comparative experience in peatland ecology from outside of Canada and bryology is highly desirable. The candidate requires background and ability to teach introductory ecology, plant geography, peatland ecology and peatland development (including methods of peatland reconstruction).

**Salary:** \$26,690 per annum.

**Appointment date:** The appointment begins 1 September 1992.

Interested applicants should submit curriculum vitae and three letters of reference by 15 July 1992 to: Dr MRT Dale, Chair, Department of Botany, B414 Biological Sciences

Centre, University of Alberta, Edmonton, Alberta T6G 2E9.

In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

## SUPPORT STAFF

To obtain further information on the following positions, please contact Personnel Services and Staff Relations, 2-40 Assiniboia Hall, telephone 492-5201. Due to publication lead time and the fact that positions are filled on an ongoing basis, these vacancies cannot be guaranteed beyond 19 June 1992. For a more up-to-date listing, please consult the weekly Employment Opportunities Bulletin and/or the postings in PSSR. Positions available as of 19 June 1992.

The salary rates for the following positions reflect adjustments in accordance with the new classification system and pay plan.

CLERK STENO (TECHNICAL TYPIST) (Grade 5) (Part-time), Faculty of Business (Finance and Management Science), (\$927 - \$1,149) (prorated)

CLERK STENO (Grade 5) (Part-time), Faculty of Business (General Office), (\$927 - \$1,149) (prorated)

CLERK TYPIST (Grade 5), East Asian Languages and Literatures, (\$1,855 - \$2,298)

CLERK TYPIST (Grade 5), Faculty of Extension (Business Program), (\$1,855 - \$2,298)

CLERK STENO (Grade 5), Faculty of Extension (Government Studies), (\$1,855 - \$2,298)

CLERK STENO (Grade 5), Instructional Technology Centre, (\$1,855 - \$2,298)

ACCOUNTS CLERK (Grade 6) (Part-time/Term to 21 May 1993), Drama, (\$1,623 - \$2,024) (prorated)

SECRETARY (Grade 6), Office of the Dean of Science, (\$2,029 - \$2,530)

DEPARTMENTAL/EXECUTIVE SECRETARY (MEDICAL) (Grade 6), Pediatrics, (\$2,029 - \$2,530)

DEPARTMENTAL/EXECUTIVE SECRETARY (Grade 6), Political Science, (\$2,029 - \$2,530)

TECHNOLOGIST (Grade 8) (Trust), Cardiology, (\$2,389 - \$3,011)

ANIMAL TECHNICIAN (SURGICAL ASSISTANT) (Grade 9), Health Sciences Laboratory Animal Services, (\$2,584 - \$3,278)

PROGRAMMER ANALYST (Grade 9), Computing Science, (\$2,584 - \$3,278)

ADMINISTRATIVE ASSISTANT (Grade 9) (Term to 31 March 1993), Faculty of Extension (Government Studies), (\$2,584 - \$3,278)

NURSING TEAM LEADER (Grade 10) (40-hour week), University Health Service, (\$3,181 - \$4,056)

The following position retains salary rate in accordance with the previous classification system and pay plan.

TECHNICIAN I (Trust), Surgery (Division of Plastic Surgery), (\$1,808 - \$2,324)

### MASS SPECTROSCOPIST, SPI SYNTHETIC PEPTIDES INC

SPI Synthetic Peptides Inc is looking for a Mass Spectroscopist with experience in peptide/protein analysis. Minimum education is an MSc or equivalent. This is a contract position for two months to train existing personnel. Salary is \$2,000 per month. Deadline for applications is 3 July 1992.

Forward résumés to: K Ens, SPI Synthetic Peptides Inc, 355 Medical Sciences Building, University of Alberta, Edmonton, Alberta T6G 2H7.



#### ACCOMMODATIONS AVAILABLE

**VICTORIA PROPERTIES** - Experienced, knowledgeable realtor with Edmonton references will answer all queries, and send information. No cost or obligation. Call (604) 595-3200, Lois Dutton, Re/Max, Ports West, Victoria, BC.

**RENT** - Riverbend condo, Essex house. Two bedrooms, furnished, \$1,200. 1-31 August 1992. Western Relocation, 434-4629.

**RENT** - Saskatchewan Drive, two storey, five bedrooms, 3,000'. Spectacular. \$2,500. Western Relocation, 434-4629.

**RENT** - Saskatchewan Drive bungalow. Fully renovated, three bedrooms, nanny suite, garage. \$2,000. Western Relocation, 434-4629.

**RENT** - Primrose, perfect location, perfect condition. Spacious bungalow, three bedrooms, two baths, double garage, \$1,200/month. Immediate possession. Western Relocation, 434-4629.

**RENT** - West end, beautiful, new, 1 1/2 storey on quiet crescent. Near country club golf course, \$1,500/month. Western Relocation, 434-4629.

**RENT/SALE** - Windsor Park north, three bedroom house. Garage, finished basement, available August. \$1,450 monthly/\$259,000, 481-6900.

**RENT** - Tired of looking? Check this one! Southwest, immaculate, three bedroom townhouse. Five appliances, fireplace, 1 1/2 baths, full basement, near bus, parks and excellent schools. Reasonable rent. 492-3356 (days), 438-6422 (evenings).

**SALE** - Executive bungalow, Saskatchewan Drive. Atrium, sauna, jacuzzi, studio, security system. Lot 90 x 137, double garage plus single tandem. Vendor leaving province, will negotiate. Janice Duke, Royal LePage Realty, 437-7480.

**RENT** - Furnished, luxury apartment in downtown high-rise, central to all facilities. Two bedrooms, \$980/month, includes all utilities except phone. Available 15 October 1992 - 15 April 1993. Phone 488-3916.

**RENT** - New, executive, 1,200', two bedroom. Superb city, river valley view, close to all amenities, University. 1 1/2 jacuzzi bath, five appliances, fireplace, garage. Tennis, golf course, four blocks. Immediate. 468-1579.

**SUBLET** - 1 September 1992 - 1 August 1993. Delightful, two bedroom in scenic Lavigne. Partially furnished, walking distance to University.

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**439-9050**  
for information

\$650/month plus utilities. Jane, 439-7053, or message at 433-1131.

**RENT** - Unfurnished, four bedroom house. Two blocks from University, available 1 August 1992. 486-5541.

**RENT** - On campus, 15 July to 31 August. Two bedroom, luxurious condo, 1 1/2 baths, well-equipped kitchen, fully furnished, underground parking. \$1,200/month. References, damage deposit, prefer mature persons. 865-5310.

**SALE** - By owner, University area, Riverwind suite 1203W. Luxury setting with unparalleled view of river valley. Price reduced. Recorded message with further details, 431-0090.

**RENT** - Aesthetic, small two bedroom house, fifteen-minute walk from University. Available 1 June - 1 September. \$500, no smoking. Phone 436-1320.

**RENT** - Lovely, furnished three bedroom Glenora home. Seven minutes to University. Two bathrooms, family room, hardwood, fireplace, six appliances, garage, landscaped. Lease negotiable. Possession 20 August 1992, \$1,050/month. 453-2066.

**RENT** - Four bedroom family home in quiet Westridge crescent. Available mid-July. 487-0437.

**RENT** - Three bedroom home facing park in beautiful Goldbar. Double garage, fireplace, rumpus room, \$800/month. 465-5763.

**RENT** - Furnished, four bedroom, Parkallen. Two baths, fireplace, piano, garage, near bus routes, fenced, quiet neighbourhood. Nonsmoking, \$750 plus utilities. September for one year, 434-1267.

**RENT** - Completely furnished home, 12 minutes to campus. Fall to spring, no pets, nonsmokers. 483-6300.

**SALE** - Parkallen, walk to University from this charming 1,650' semibungalow. Renovated with addition including kitchen extension and greenhouse, 11219 71 Avenue, \$159,000. 436-5537.

**RENT** - Five bedroom executive home, 25 minutes from campus. Quiet crescent location, spacious yard backs onto park. 1 September - June/July 1993. Furnished, \$1,100/month. 492-4251, 460-2918.



#### RESEARCH TECHNOLOGIST

The Cross Cancer Institute invites applications for a position within a research laboratory studying contact-dependent intracellular signals of relevance to cancer, and the immune process. The applicant would use molecular biology techniques including DNA transfection and site-directed mutagenesis to investigate the function of molecules involved in signal generation. The applicant would be expected to perform and conduct experiments, develop and test new, or existing methods, and perform some routine maintenance operations associated with laboratory organization and function.

Experience in molecular biology is essential and experience in tissue culture would be desirable.

Please submit resume or application to:

**L. Buksa**  
**Cross Cancer Institute**  
**11560 University Avenue**  
**Edmonton, Alberta, T6G 1Z2**

*The Cross Cancer Institute is a smoke free workplace.*

**SALE/LEASE** - Luxury, adult, low-rise. Central atrium, fireplace, private fenced yard, seven appliances, two underground stalls, new carpet/painting. Small pets allowed! Diane Kyle Realty, Diane, 488-8844.

**FORECLOSURE** - Two bedroom, river valley/city views. Underground parking, storage. Immaculate condition, soft grey decor includes blinds. Two minutes - downtown. Won't last, \$79,900. Diane Kyle Realty, Diane, 488-8844.

**SALE** - Walk to campus, Old Strathcona, Mill Creek. Choose your suite and rent the other two. Perfect hardwood floors, fresh paint, double garage, \$159,900. Warren Hurt, NRS Realty, 497-8511.

**SALE** - University area, three bedroom bungalow, basement suite, huge lot, double garage, \$131,900. 11243 73 Avenue, 438-7919 after 5 pm.

**SALE** - Western Living award winner. Belgravia semi-bungalow, three bedrooms, 1 1/2 baths, formal living and dining rooms, professionally finished basement, south back yard. Asking \$159,900. Andrea Hammond, 435-5640, Royal LePage, 436-5080.

**RENT** - North Garneau character home. Three bedrooms, ideal for University faculty, \$900 plus utilities, 1 August. 433-4510.

**RENT** - Petrolia bungalow; furnished, three bedrooms, 2 1/2 baths, study, seven appliances. Overseas posting. 1 August 1992 - 1993. No pets, nonsmokers, references, \$1,000/month. Margaret, 436-6387, 492-5048.

**RENT** - Near University, 1 July. Furnished, three bedroom, double garage, pie lot, \$725/month. 438-0213.

**RENT** - Three bedroom, furnished home in Parkallen, 12 July - 16 August. Ideal for family, close to University. For more information, call 437-4316.

**RENT** - Walk to University. Executive, two bedroom, den, five appliances, fireplace, underground parking. No pets, \$1,050/month, immediate. 481-3513.

**RENT** - Riverbend, four bedrooms, family room, finished basement. Near bus, schools, \$1,200/month. 1 July 1992, one year lease. 430-6802.

#### ACCOMMODATIONS WANTED

**MATURE** University employee available to housesit, previous experience. Phone Joanna, 433-8668 or 492-6365.

**NEEDED/SWAP** - Place to stay July - 14 August in Edmonton. Teaching couple. Could swap spacious apartment in Frankfurt. Ray Morgenstern, Im Rosengartchen 114, 6370 Oberursel, Germany. Phone 0049-6171-23258. Fax 0049-6171-202172.

**FURNISHED** home required. Three/four bedrooms, downtown/central location. September 1992 - May 1993, up to \$1,500/month. Western Relocation, 434-4629.

**FURNISHED** two bedroom, plus den required. Two year lease, 1 September 1992. Downtown/central location. Western Relocation, 434-4629.

**VISITING ACADEMIC** with family needs three bedroom, furnished accommodation for August and September. Phone Doug Wilson, 492-2275.

#### GOODS FOR SALE

**CASH PAID FOR APPLIANCES**, 432-0272  
**1965 ENTERPRISE SAILBOAT** - Fibreglassed mahogany hull, excellent condition, \$1,300. George Moonie, 439-0851; Ma-me-o Beach, 586-2041.

**ONE** queen waterbed; chesterfield/chair set; kitchen set (table/two chairs); single brass headboard; single bed/wood headboard; electric mower. Two end tables; two colour TV's. 435-1787 after 6 pm.

**NOTHING OVER \$65.** Attractive ornamental concrete birdbaths and planters. Your choice of colours. Rick, 476-5426.

**SINGLE** boxspring, mattress, used two months, \$130.00. Phone 437-3789.

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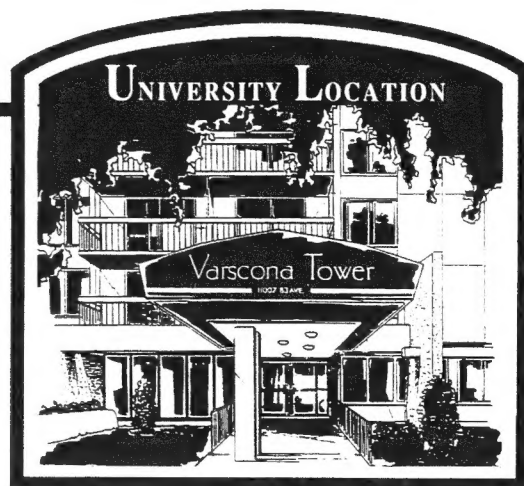
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#### MISCELLANEOUS

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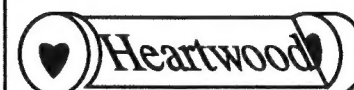


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